DOCUMENT RESUME

ED 345 265 CS 213 332

AUTHOR Engelmann, Chip
TITLE What Influences the Daly-Miller Test for Writing Apprehension?
PUB DATE Mar 92
NOTE 14p.; Paper presented at the Annual Meeting of the Conference on College Composition and Communication (43rd, Cincinnati, OH, March 19-21, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Freshman Composition; Higher Education; Longitudinal Studies; Undergraduate Students; *Writing Apprehension; *Writing Attitudes; Writing Difficulties; Writing Instruction; Writing Research; Writing Workshops
IDENTIFIERS Basic Writers; *Writing Apprehension Test (Daly and Miller)

ABSTRACT

A series of five studies examined factors that influence how students respond to questions on a writing apprehension test. In the first study, the Daly-Miller Writing Apprehension Test was administered 4 times to 34 students in 2 freshman composition classes. Conventional scoring of test results were inconclusive--the total score for all students changed very little while dramatic changes were occurring for individual students. Data were reevaluated by grouping the 26 statements in the test into 10 categories according to subject matter (including self-esteem, clarity, enjoyment, and showing to others). The second study was a case study of a freshman composition student; the third study was a comparison of writing apprehension between a computer lab environment and a classroom environment; the fourth study examined a freshman composition workshop developed as an adaptation of Nancie Atwell's workshop for eighth graders; and the last study used five basic writing classes as subjects. Results of all five studies indicated that scores rose between the first and second test, fell between the second and third test, and rose between the third and fourth test. Findings suggest that the drop in scores was influenced by a particularly difficult assignment or by factors that are part of the natural cycle of the semester, although no definitive conclusions were drawn. (Two tables of data and four figures--presenting the test and scoring procedure, short abstracts of the studies, statement categories, and factors possibly affecting test results--are included.) (RS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Robert (Chip) Engelmann
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Chip Engelmann
California State University at Northridge
Paper presented at the CCCC, Boston, 3/20/91

ED345265

What Influences the Daly-Miller Test for Writing Apprehension

Introduction

Research in writing apprehension falls into three main categories: correlational studies, case studies, and pre/post testing of the effectiveness of methodology. Within each category, the Daly-Miller Test for Writing Apprehension is commonly used as a research tool. (See first handout.) Correlational studies, such as those conducted by Daly et al., compare writing apprehension to other factors such as reading ability, gender, or math anxiety. Students in these studies are administered the Daly-Miller Writing Apprehension Test (WAT) along with one or more other tests (such as a test of reading ability) and the results compared to demonstrate correlation. The purpose of these correlational studies is to probe the nature of writing apprehension. Case studies examine individual students in an attempt to isolate the symptoms and causal factors of writing apprehension.

Probably the most widespread use of the Daly-Miller Test is for pre/post testing. In the pre/post test methodology, educational programs or specific pedagogies are tested both at the beginning and end of a course to determine whether the program is effective at reducing writing apprehension. Some studies use control groups, others do not. Often the WAT test is administered in addition to the true focus of the study. For example, if a researcher were studying the effects of freewriting on student writing quality, the researcher might also give a pre and post test of the WAT.

CS213332

BEST COPY AVAILABLE

The Daly-Miller Test for Writing Apprehension

Below is a series of statements about writing. There are no right or wrong answers to these statements. Please indicate the degree to which each statement applies to you by circling the number that shows whether you strongly agree, agree, are uncertain, disagree, or strongly disagree with the statement. While some of these statements may be repetitious. please respond to all of them, take your time and try to be as honest as possible. Thank you for your cooperation in this matter.

	strongly agree	agree	uncertain	disagree	strongly disagree	
+	1	2	3	4	5	1. I avoid writing.
-	1	2	3	4	5	2. I have no fear of my writing's being evaluated.
-	1	2	3	4	5	3. I look forward to writing down my ideas.
+	1	2	3	4	5	4. I am afraid of writing essays when I know they will be evaluated.
+	1	2	3	4	5	5. Taking a composition course is a very frightening experience.
-	1	2	3	4	5	6. Handing in a composition makes me feel good.
+	1	2	3	4	5	7. My mind seems to go blank when I start to work on my composition.
+	1	2	3	4	5	8. Expressing ideas through writing seems to be a waste of time.
-	1	2	3	4	5	9. I would enjoy submitting my writing to magazines for evaluation and publication.
-	1	2	3	4	5	10. I like to write down my ideas.
-	1	2	3	4	5	11. I feel confident in my ability to express my ideas clearly in writing.
-	1	2	3	4	5	12. I like to have my friends read what I have written.
+	1	2	3	4	5	13. I'm nervous about writing.
-	1	2	3	4	5	14. People seem to enjoy what I write.
-	1	2	3	4	5	15. I enjoy writing.
+	1	2	3	4	5	16. I never seem to be able to write down my ideas clearly.
-	1	2	3	4	5	17. Writing is a lot of fun.
+	1	2	3	4	5	18. I expect to do poorly in composition classes even before I enter them.
-	1	2	3	4	5	19. I like seeing my thoughts on paper.
-	1	2	3	4	5	20. Discussing my writing with others is an enjoyable experience.
+	1	2	3	4	5	21. I have a terrible time organizing my ideas in a composition course.
+	1	2	3	4	5	22. When I hand in a composition, I know I'm going to do poorly.
-	1	2	3	4	5	23. It is easy for me to write good compositions.
+	1	2	3	4	5	24. I don't think I write as well as most people.
+	1	2	3	4	5	25. I don't like my compositions to be evaluated.
+	1	2	3	4	5	26. I'm not good at writing.

Scoring the Daly-Miller Test

The standard method of evaluating the Daly-Miller Test for Writing Apprehension is to total the response scores of twenty-six statements. A higher score reflects a higher level of confidence; a low score reflects a lower level of confidence (or increased writing apprehension).

The scoring system is purposely convoluted so that it is not self-evident to the test-taker. The responses are rated on a five-point scale: strongly agree=1, agree=2, uncertain=3, disagree=4, and strongly disagree=5. Some scores are added to the point total while others are subtracted. Higher scores are given to negative responses.

Therefore, negatively worded statements, e.g. "1. I avoid writing." (creating a double negative) are assigned a positive point value. A positively worded statement, e.g. "15. I enjoy writing." is assigned a negative point value. The point total is then added to 78 (26 x 3, or the number of statements times the median score per statement) for a final score. The highest possible score is 130; the lowest possible score is 26.

The work presented here utilizes a variation of the pre/post test methodology. I administered WAT tests at intervals throughout the course of the semester to chart the rise and fall of writing apprehension. While examining patterns of data, I found that many factors influenced the way students responded to questions on the WAT test. These factors include but are not limited to: pedagogy used in the classroom, particular writing projects the students were working on, grades received on previous papers, mid-term exam pressures in other classes, and personal problems.

Looking at the WAT Scores

My plan was to administer the WAT test after the first draft of each paper was due so that any anxiety the students had with the particular assignment would be fresh in their minds. I expected that, from test to test, scores would either rise, fall, or stay the same, and this trend would indicate the effectiveness of my teaching methods.

More specifically, I hypothesized that WAT scores would drop drastically (i.e. more apprehension) after the students received grades from their first papers. The scores would then rise and continue to rise throughout the remainder of the semester. But upon tallying the scores after my first study, I found the results were not as predicted.

I administered the WAT test four times. From the first to the second test, the total score of all 34 students increased by one point. Yet on closer inspection, sixteen individual student scores rose (as much as 15 points--a significant amount), seventeen scores fell (as much as 20 points) and one remained the same. (See table, "The Rise and Fall of Student Test Scores in Study 1.") From the second to the third test, the total WAT score for the 34 students dropped by nineteen points--yet of the individual student

Table The Rise and Fall of Student Test Scores in Study 1

Test	Total Test Score for 34 Students	# Students Whose Score Increased	# Students Whose Score Decreased	# Students Whose Score Rema ined the Same
1	2824	N/A	N/A	N/A
2	2825	16	16	2
3	2806	17	16	1

Short Abstracts of the Studies

Study 1--A look at two Freshman Composition classes.
Two classes, 34 students total, were tested for writing apprehension four times over the course of a semester. The tests were given after the first draft of each of their three assignments and after the final exam. The method of categorizing and scoring the WAT test (used for the five studies) was created. The classes' WAT scores increased, but no conclusions were reached. Symbol on graph=**Study1**

Study 2--Case Study (Collaboration of Dr. Thia Wolf and three teaching assistants.)
A Freshman Composition student was tracked over the course of a semester with: four WAT tests, tape recordings of his reader response groups, written work and an interview. We hypothesized that the response groups would decrease writing apprehension, but in this case, we found the opposite to be true. The student had a fight with his girlfriend just before handing a draft to his group. He felt the group had picked on him, and started changing his writing as to avoid group criticism. His scores on the WAT decreased dramatically after the incident. Not represented on graph.

Study 3--A Comparison of Writing Apprehension between a Computer Lab Environment and a Classroom Environment
Two classes using the same teaching method with the same instructor, one in a computer lab environment and one in a more typical classroom setting, were tested five times for writing apprehension. Although the computer lab class's average WAT score gained twice that of the classroom class, no conclusions were reached. Not represented on graph.

Study 4--Freshman Composition Workshop
This class was taught in the computer lab using an adaptation of Nancie Atwell's workshop for eighth graders. Basically the students chose their own topics and worked at their own speed. They collaborated with fellow students and the instructor as they felt necessary. They were also allowed to choose (with approval of the instructor) their own reading material, a required three hours per week. The class was tested four times and had a large overall gain for the semester. No conclusions were reached. Representation on graph=**Work ST4**

Study 5--Five Basic Writing Classes
Five Basic Writing classes were tested four times for writing apprehension. Of the five, two were taught by the same instructor using the modified Atwell workshop (one in the computer lab). The other three were taught by other instructors, AKA Ms. Stanton, Ms. Clark, and Mr. Thompson. The workshop class in the classroom had the highest gain in confidence of all the studies. The workshop in the computer lab had the lowest gain in the study. No conclusions were reached.

Graph representation:
Computer Workshop=**Comp Lab**
Classroom Workshop=**Work Class**
Ms. Stanton's Class=**Compare 1**
Ms. Clark's Class=**Compare 2**
Mr. Thompson's Class is not represented

scores, sixteen rose, sixteen fell, and two remained the same. Scoring the WAT test using the conventional method had, I felt, told me nothing. The total scores changed very little, while dramatic changes *were* occurring in the individual students. I decided to examine fluctuations of the twenty-six separate WAT statement scores to gain more insight.

I created a spreadsheet comparing every WAT statement for every student to show fluctuations between tests. The spreadsheet confirmed that certain statement scores fluctuated more than others. I also noticed that different statements often referred to the same idea, and might be grouped to establish patterns among the data. Based upon key words, I categorized the statements according to subject matter. For example, statement 15, "I enjoy writing," would be placed in the category ENJOYMENT, along with statement 17, "Writing is a lot of fun." Some statements fit into more than one category. In all, ten categories were created. (See handout, "Categories of Statements.")

A Pattern and Possible Causes

If we look at the overall rise and fall of test scores throughout the semester for each of the classes studied, a pattern emerges. (See handout, "Overall Test Scores.") Scores rise between the first and second test, fall between the second and third test, and rise between the third and fourth test. The exception to this pattern, the Classroom Workshop ("Work class"), gains throughout the semester. Yet, the shape of the class's curve is consistent with the others shown on the graph in that the rate of increase drops between the second and third test.

What could be the cause of this mid-semester drop? The table underneath the graph lists the statement categories in which drops occurred in this period.

Categories of Statements

Based upon key words, I grouped the statements into categories according to subject matter. For example, statement 15., "I enjoy writing." would be placed in the category ENJOYMENT. Statement 26., "I'm not good at writing.", would be placed in the category EASE/ABILITY. Some statements appear in more than one category . In all, ten categories were created:

STARTING/AVOIDANCE

1. I avoid writing.
7. My mind seems to go blank when I start to go to work on my composition.

IDEAS

3. I look forward to writing down my ideas.
8. Expressing ideas through writing is a waste of time.
10. I like to write down my ideas.
11. I feel confident in my ability to express my ideas clearly in writing.
16. I never seem to be able to write my ideas down clearly.
21. I have a terrible time organizing my ideas in a composition course.

EVALUATION

2. I have no fear of my writing's being evaluated.
4. I am afraid of writing essays when I know they will be evaluated.
9. I would enjoy submitting my writing to magazines for evaluation and publication.
12. I like to have my friends read what I have written.
14. People seem to enjoy what I write.
20. Discussing my writing with others is an enjoyable experience.
25. I don't like my compositions to be evaluated.

COMPOSITION COURSE

5. Taking a composition class is a very frightening experience.
18. I expect to do poorly in composition classes even before I enter them.
22. I have a terrible time organizing my ideas in a composition course.

HANDING IN ASSIGNMENTS

6. Handing in assignments makes me feel good.
22. When I hand in a composition, I know I'm going to do poorly.

SHOWING TO OTHERS

9. I would enjoy submitting my writing to magazines for evaluation and publication.
12. I like to have my friends read what I have written.
14. People seem to enjoy what I write.

ENJOYMENT

9. I would enjoy submitting my writing to magazines for evaluation and publication.
10. I like to write down my ideas.
12. I like to have my friends read what I have written.
15. I enjoy writing.
17. Writing is a lot of fun.
19. I like seeing my thoughts on paper.

EASE/ABILITY

13. I'm nervous about writing.
14. People seem to enjoy what I write.
23. It's easy for me to write good compositions.
24. I don't think I write as well as other people.
26. I'm not good at writing.

CLARITY

11. I feel confident in my ability to express my ideas clearly.
16. I never seem to be able to write my ideas down clearly.

SELF-ESTEEM

6. Handing in my compositions makes me feel good.
8. Expressing ideas through writing seems to be a waste of time.
10. I like to write down my ideas.
12. I like having my friends see what I have written.
19. I like seeing my thoughts on paper.

Overall Test Scores

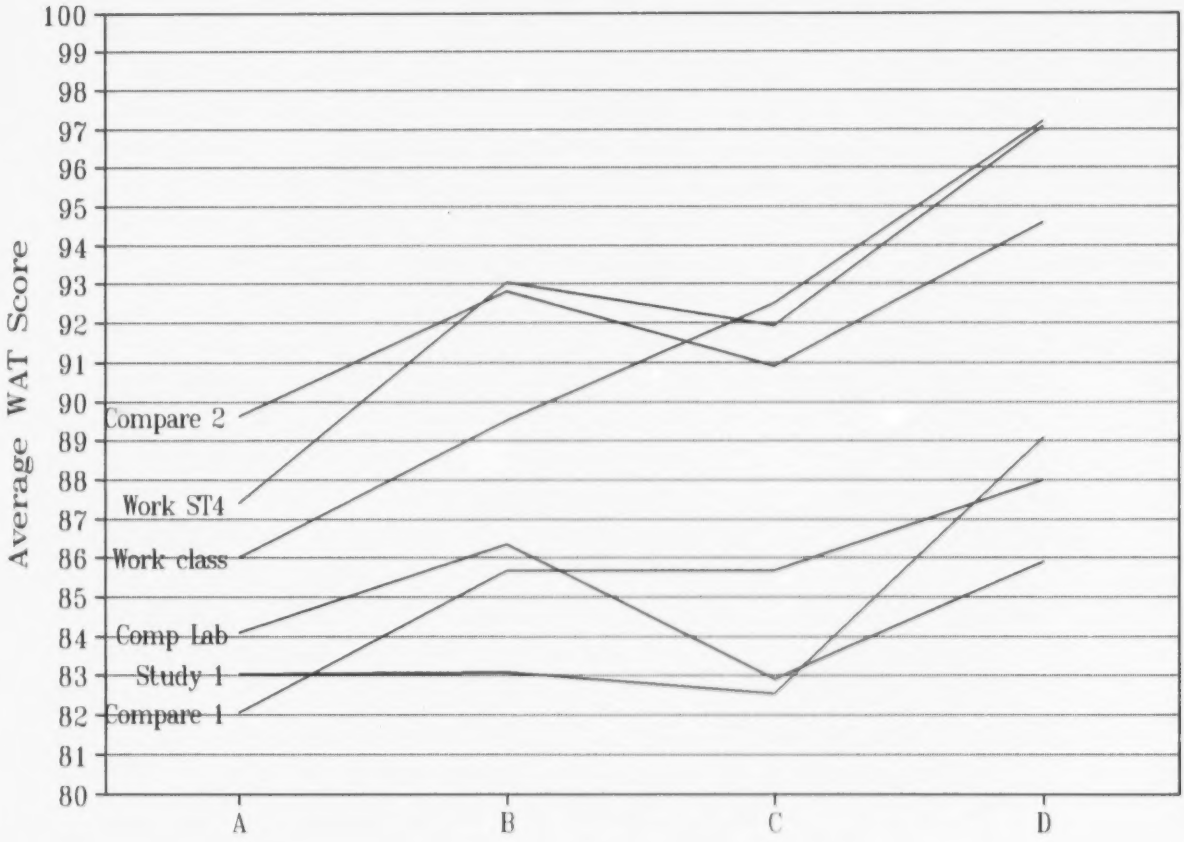

Table Categories in Which Test Scores Dropped from the Second to the Third Test

Comparison Class 1	**EVALUATION**
	SHOWING TO OTHERS
	STARTING/AVOIDANCE
Comparison Class 2	**EVALUATION**
	CLARITY
	IDEAS
	SELF-ESTEEM
	ENJOYMENT
Comparison Class 3	**EVALUATION**
	SHOWING TO OTHERS
	EASE/ABILITY
Classroom Workshop	EASE/ABILITY
Computer Lab Workshop	**EVALUATION**
	HANDING IN ASSIGNMENTS
	COMPOSITION COURSE
	SELF-ESTEEM
	ENJOYMENT
	SHOWING TO OTHERS
	EASE/ABILITY
Study 1	**EVALUATION**
	COMPOSITION COURSE
	IDEAS
	SHOWING TO OTHERS
	ENJOYMENT
	EASE/ABILITY
Workshop Study 4	**EVALUATION**
	IDEAS
	ENJOYMENT
	SELF-ESTEEM

Instructors Ms. Stanton, Ms. Clark, and I all pointed to a department-required, text-based paper assigned at the time the third WAT test was administered, and indicated that we thought the difficulty of this paper might be the primary cause for the decrease in apprehension scores (i.e. increase in apprehension). This conclusion is supported by the fact that the categories where scores dropped-- EASE/ABILITY, SHOWING TO OTHERS, etc.-- were those that would naturally fall if students had trouble with an assignment. Mr. Thompson could not remember whether his students had trouble with the text-based assignment, but the WAT test was administered during the class period before the assignment was due, so it could have been the causal factor. The two classes in Study 1 were also working on a particularly difficult paper when the third WAT test was given.

The instructors' conclusion that the difficult, text-based assignment influenced the WAT test was natural because they were asked to state factors that existed within their course that may have influenced the test. They would not presume to look for more global factors such as the possibility that this drop in score reflected the natural cycle of the semester or the fact that for most students the WAT test was given during a time of heavy mid-term pressures.

The data easily supports the latter, alternate conclusions. The fact that the category EVALUATION dropped throughout all the studies, with the exception of the classroom workshop, is evidence to support the argument that pressures exterior to the classroom, i.e. mid-term exam pressures, could have significantly influenced the drop. Even the workshop class in Study 4, where the papers were assigned without due dates, dropped in the category EVALUATION. The students may have been anxious about

grades in other courses, leading to concern about the grades they would receive in their writing class which would contribute to their grade point average.

The six classes studied represent three instructors, two instruction levels, two class environments and five pedagogies. The fact that a pattern emerged in spite of such a variety of representation is strong evidence to support the assertion that outside factors--the natural cycle of a semester, mid-term exam pressures, or other factors--may significantly affect WAT test scores.

No Conclusion Reached

The pattern of drop between tests two and three, in the overall scope of this study, has been explained as being influenced: 1) by a particularly difficult assignment, and 2) by factors that are part of the natural cycle of the semester. While both arguments have merit, neither is conclusive. It would be safe to say that both factors have an influence, yet it is impossible to determine which of the two is the dominant factor, let alone the ratio of influence. Or maybe there is some other influence yet to be determined. The handout, "What Can Affect the Daly-Miller Test," lists over 35 factors evidenced in the course of these studies that possibly affected WAT test scores. Some of the factors arose within the classroom, some within the testing context, some within the writer's personality, some outside the classroom, and some outside the school context.

Questioning the Validity of Studies Using the WAT Test

When so many factors may influence a WAT test score, it is unrealistic to presume to isolate a variable such as a particular pedagogy or environment in a study

What Can Affect the Daly-Miller Test

The following are factors that could possibly affect the Daly-Miller Test for Writing Apprehension. Evidence supporting the assertion that they have an influence on the test is either empirical, from the study results, or anecdotal, from interviews with students and their instructors. Some of the anecdotal evidence is given below.

- Anger over a grade
- Fear of not qualifying for medical school
- The natural cycle of the semester
- Writing assignments
- A fight with a girlfriend
- A bad encounter with a peer group
- A death in the family
- The use of a word-processor
- The classroom environment
- The nature of the writing assignment
- A sense of accomplishment
- An instructor's comment
- Pedagogy
- Mid-terms in other classes
- A student's preconceived notion about her writing ability
- Grading procedures
- A student's feeling toward the subjects of reading, writing, and English
- Freedom of expression in writing
- Experiences with negative feedback on written work
- Attitudes toward a writing project when the WAT test is taken
- The context in which the test is taken (does it help the student, the instructor, or the school)
- Who gives the test (instructor or "test guy")
- The preconceived notions about the test
- Attitudes toward the test
- The difficulty factor of a writing assignment
- The pressures of completing a portfolio
- The inability of an instructor to define an assignment
- The instructor's anxiety
- A writer's inexperience
- Expectation of criticism
- The need to make meaning of a written work in an assignment
- Feelings of inadequacy in the writer
- The need to be right/the fear of being wrong
- Intimidation by an instructor
- An instructor's commenting practices
- Circumstances in which the WAT test is taken
- A student's study habits

"I'm almost certain that it was [the assignment] that generated the drop. This was really different from the other things I asked them to do. The first two papers were based more or less on their experience and their ideas....So, in essence, they were writing about somebody else's ideas rather than their own. And they were structured and they didn't feel as free to express themselves.....My ideas that this really caused the drop are somewhat validated because the same sort of thing happened in the class I'm teaching currently. They all sort of freaked out about this particular paper--even though I changed it a little bit."

"If you would have seen the pain I went through. The agony--my English classes, I hated them. I hated them. And the worst part was--This class has helped me express the way I feel about certain things on paper. One example I remember was *The Great Gatsby* and I loved that book. It was in my English class and I wrote a paper on it, an essay, and that was graded with another test. I thought I did so great on it because I loved this book. I was really jazzed about it. I wrote about what this meant and all this. And I really got a lot out of the book. But I couldn't write it effectively or--I don't know. Anyway I got my test back and I had a big old "D" written on it. And it just like crushed me."

"When we're taking those little surveys about how I feel about writing, well there's different things--like if I'm writing a story maybe I'm not too happy with, it's going to change my attitude as to whether I would enjoy someone reading what I've written."

"I think the grading scale in the class is kinda hard. But see, I don't know how you grade essays. But when it comes down to the punch line, we hand in all four of our essays, you know, cause we're handing them all in, or three what ever it was, and we hand them in, we're going to get points for those. And I guess they're a hundred points apiece, right? And say we get a bad grade on one of them. I mean that's going shoot our whole grade. Cause I guess the grading scale, I feel, is kinda hard. But I guess that's the scale down from the department, I don't know. See I don't know how you grade. That's the only thing that scares me about us not handing our papers in. That's the only one fear. But I like it better that we can hand them all in at once. You see, I guess it's like Catch-22. I love it that we have the extra time that we need to get all the papers in. But yet, what if we get a bad grade on one of them. What if we have a bad paper. That's the only thing I fear."

Researcher: Can you think of anything that has happened to you in the past that might have caused the fear to arise in your writing now?

Tom: Yeah. Yeah. There was--I lost a family member a while ago. And that's--always since that I never talked to anyone about it. I've never--I never cried about it. It's a really close member of the family.

Researcher: Uh huh.

Tom: And just ever since, I've been keeping my feelings in. And as far as I think about it, I'm fine. I can handle it. You know, I don't need anybody, kinda thing. When I write down--when I write essays, you know, on my paper, it's just kinda, I do the same thing.

using the Daly-Miller test. For this reason, I question the validity of studies utilizing a pre/post test methodology with the Daly-Miller test. However, if research were done to establish the rise and fall of the statement categories throughout the natural cycle of a course, data could be reexamined and shown to be either consistent or inconsistent with the norm.

Likewise, I question the validity of correlational studies where WAT tests are administered once to a large population and then correlated to tests for reading ability, etc. If cycles of the semester affect test scores, then scores might be higher at the end of the semester than they would be at the beginning of the semester. To go a step further, perhaps the cycles of the week could affect scores. A test administered on Friday afternoon might score higher than a test on Monday morning. Given the variety of possible influences on writing apprehension test scores, a correlational study would increase its validity by using a very large population and spreading the test dates throughout the calendar year.

I do not imply that the Daly-Miller Test is not a measuring tool of writing apprehension. However, I conclude that any research project using the tool as part of its methodology should be scrutinized for unwanted variables--factors that directly and indirectly affect WAT test scores.

In Retrospect

If I were to repeat my last study, which was designed to see whether writing apprehension decreased for basic writers in a workshop style classroom, I would drastically change the approach. I would still administer the WAT test at various

intervals throughout the semester to both the experimental group and the comparison groups, but instead of tabulating scores and drawing conclusions, I would interview students after they had completed each test.

I would show them the test they had just completed, along with their previous WAT scores. I would ask them to speculate on why their responses to the statements changed, while encouraging them to address related subjects: how they're doing in school, how they feel about the teacher, what they like and dislike about the instructional methods, etc. I would then compile these statements and search for similarities, differences, and patterns in the nature of the statements.

The collective data would then suggest whether workshops as an instructional methodology may or may not decrease writing apprehension in basic writers. Yet even if no conclusion could be reached, the information obtained from student interviews would be valuable in helping to unlock the mystery of the causes of writing apprehension.

Works Consulted

Atwell, Nancie. *In the Middle: Writing, Reading and Learning with Adolescents.* Portsmouth: Boyton/Cook Heinmann. 1987.

Cheshire, Barbara W. "The Effects of Writing Apprehension on Writing Quality". Conference paper. Conference on College Composition and Communication. New York, 29-31 Mar 1984. *Abstract* ERIC: ED258264 CS209069.

Daly, John. "Writing Apprehension". *When a Writer Can't Write.* Ed. Mike Rose. New York: Guilford Press. 1985.

Gere, Ann Ruggles. "Emperical Research in Composition". Ed. Ben W. McClelland and Timothy R. Donovan. *Perspectives on Research and Scholarship in Composition.* New York: Modern Language Association of America. 1985.

Moffett, James. *Teaching the Universe of Discourse.* Portsmouth: Boyton/Cook Heinmann. 1983.

Reed, W. Michael. "Daly and Miller's Writing Apprehension Test and Hunt's T-Unit Analysis: Two Measurement Precautions in Writing Research". *Journal of Research and Development in Education*. v21 n2 Win 1988: 1-8.

Selfe, Cynthia L. "Reading as Writing Strategy: Two Case Studies". Ed. Bruce T. Peterrsen. *Convergences: Transactions in Reading and Writing.* Urbana: National Council of Teachers of English. 1986.

Teichman, Milton and Paris, Marilyn. "Initial Effects of Word Processing on Writing Quality and Writing Anxiety." *Computers and the Humanities*. v23 n2 Apr 1989: 93-103.

Tighe, Mary Ann. "Reducing Writing Apprehension in English Classes". Conference paper. NCTE Convention. Louisville, 26-28 Mar 1987. *Abstract* ERIC: ED281196 CS210400.